

E. Rowe,

Preparing Ichthyocolla.

No. 5978.

Patented Dec. 19, 1848.

Fig. 2.

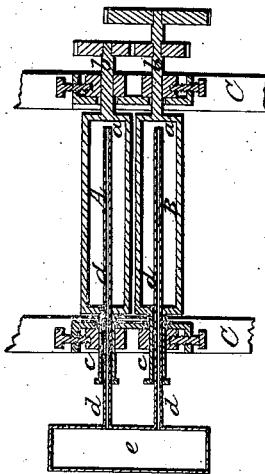
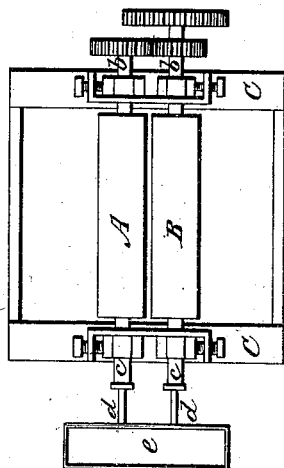


Fig. 1.



UNITED STATES PATENT OFFICE.

EBENEZER ROWE, OF ROCKPORT, MASSACHUSETTS.

IMPROVEMENT IN THE MANUFACTURE OF ICHTHYOCOLLA.

Specification forming part of Letters Patent No. 5,978, dated December 19, 1848.

To all whom it may concern:

Be it known that I, EBENEZER ROWE, of Rockport, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Machinery used in the Manufacture of Isinglass or Ichthyocolla; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1 denotes a top view of my improved machine for rolling the pasty mass of fish-bladder to a thin sheet. Fig. 2 is a horizontal section of the hollow rollers or cylinders of the same, the cold water cistern and pipes leading into the cylinders or rollers.

After the air-bladder of the fish has been suitably prepared for manufacture into isinglass or ichthyocolla by breaking or reducing it in a machine or mill consisting of a roller and knives by which the air-bladder is cut or reduced into small pieces, it is next to be run or caused to pass between iron or composition rollers, so as to convert it into long and very thin sheets or strips. After this process has been completed the said sheets are dried for use.

Great care is required to prevent the material from becoming so soft while passing between the flattening-rollers as to stick or adhere to them, the softening taking place in consequence of the heat generated during the operation. In order to overcome the heat it has been customary to place ice over or upon the outside surface of the rollers, and there permit it to remain until the rollers have been sufficiently cooled. This being effected and the ice having been removed, the rollers were wiped dry and put in motion. The operation of flattening a mass of ichthyocolla was next carried on until the rollers became so heated as to render it necessary to again apply ice to them. Such a mode of cooling the rollers necessarily causes a considerable loss of time, and besides this is attended with one great disadvantage—viz., the moistening of the external surface of the cylinders to such extent that some time must elapse before they can be dried sufficiently for use.

In my improved method of cooling the roll-

ers I make them hollow, as seen in Fig. 2, A B being said rollers, arranged on the top of the frame C. Each of the said rollers is provided with a solid journal, *b*, extending from the middle part of one head, *a*, of it, and also with a hollow or tubular journal, *c*, made to extend from the middle part of the other head of it, as seen in the drawings. The journals so made are to run and be supported in boxes, which are provided with adjusting-screws or other suitable contrivances, by which one of the rollers may be moved toward or away from the other, as circumstances may require, such adjustable contrivances being now used in machines which are provided with the solid rollers.

Through each tubular journal *c* a tube, *d*, which leads from and out of a cold-water cistern, *e*, passes and is extended through the middle of the roller, so as to nearly touch the head *a*, the said tube *d* being made of an external diameter somewhat less in size than the internal diameter of the tubular journal through which it is carried. Ice and water are placed in the cistern or reservoir *e*, or a stream of cold water is caused to flow into it. The said water will flow through each of the induction-tubes *d d* and impinge against the head *a* of the roller to which said tube is applied. From thence it will flow back through the roller and finally escape through the hollow journals or eduction-tubes. In its backward course it will be spread against the inner surface of the cylinder and effectually cool the same and the whole outside surface of the cylinder.

In such attempts as we have made to keep the cylinders cool by water suffered to flow into one journal and out of the opposite one, we find it exceedingly difficult to effect the same, on account of the current of cold water taking a rapid course directly through the mass of warmer water surrounding it. It does not impinge directly against the inner curved surface of the roller, but moves directly through the roller in the line of its axis; but when an induction-tube is used and made to extend through an eduction-tube placed on that end of the roller at which the induction-tube is applied, we find from experience that the warm water will be effectually driven out by the cold

water which will course directly against the internal surface of the cylinder and press the warm water toward the entrance-tube and out of the eduction-tube or journal.

For this purpose I claim—

The above-described means of cooling each of the cylinders by cold water in the manner and for the purpose described—viz., by the eduction and eduction tubes placed at one end of the cylinder, and making the induc-

tion-tube to extend through the eduction-tube and the middle of the cylinder and nearly to the other end of it, as specified.

In testimony whereof I have hereto set my signature this 24th day of November, A. D. 1848.

EBENEZER ROWE.

Witnesses:

CALEB EDDY,
R. H. EDDY.